



SEQUENCE LISTING

<110> Bednarek, Maria A.

<120> SELECTIVE MELANIN-CONCENTRATING HORMONE
TYPE-1 RECEPTOR AGONISTS

<130> 20954P

<150> PCT/US03/00241

<151> 2003-01-06

<150> 60/347,191

<151> 2002-01-09

<160> 38

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 19

<212> PRT

<213> Human

<220>

<221> DISULFID

<222> (7) ... (16)

<400> 1

Ala Phe Asp Met Leu Arg Cys Met Leu Gly Arg Val Tyr Arg Pro Cys

1

5

10

15

Trp Gln Val

<210> 2
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> MCH Analog

<220>
<221> DISULFID
<222> (2) ... (11)

<220>
<221> ACETYLTATION
<222> (1) ... (1)

<220>
<221> AMIDATION
<222> (11) ... (11)

<400> 2
Arg Cys Met Leu Gly Arg Val Tyr Arg Pro Cys
1 5 10

<210> 3
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> MCH Analog

<220>
<221> MOD_RES
<222> (1) ... (1)
<223> Xaa = des-amino-arginine

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 3

Xaa Cys Met Leu Gly Arg Val Tyr Arg Pro Cys

1

5

10

<210> 4

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1) ... (1)

<223> Xaa = D-arginine

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 4

Xaa Cys Met Leu Gly Arg Val Tyr Arg Pro Cys

1 5 10

<210> 5
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> MCH Analog

<220>
<221> MOD_RES
<222> (1)...(1)
<223> Xaa = D-arginine

<220>
<221> DISULFID
<222> (2)...(11)

<220>
<221> ACETYLTATION
<222> (1)...(1)

<220>
<221> AMIDATION
<222> (11)...(11)

<400> 5
Xaa Cys Met Leu Gly Arg Val Tyr Arg Pro Cys
1 5 10

<210> 6
<211> 11
<212> PRT
<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1) ... (1)

<223> Xaa = D-alanine

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLTATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 6

Xaa Cys Met Leu Gly Arg Val Tyr Arg Pro Cys

1

5

10

<210> 7

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1) ... (1)

<223> Xaa = D-norleucine

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLTATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 7

Xaa Cys Met Leu Gly Arg Val Tyr Arg Pro Cys

1

5

10

<210> 8

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1) ... (1)

<223> Xaa = D-proline

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 8

Xaa Cys Met Leu Gly Arg Val Tyr Arg Pro Cys

1

5

10

<210> 9

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1) ... (1)

<223> Xaa = D-phenylalanine

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 9

Xaa Cys Met Leu Gly Arg Val Tyr Arg Pro Cys

1

5

10

<210> 10

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1)...(1)

<223> Xaa = D-asparagine

<220>

<221> DISULFID

<222> (2)...(11)

<220>

<221> ACETYLTATION

<222> (1)...(1)

<220>

<221> AMIDATION

<222> (11)...(11)

<400> 10

Xaa Cys Met Leu Gly Arg Val Tyr Arg Pro Cys

1

5

10

<210> 11

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1)...(1)

<223> Xaa = D-serine

<220>

<221> DISULFID

<222> (2)...(11)

<220>

<221> ACETYLTATION

<222> (1)...(1)

<220>

<221> AMIDATION

<222> (11)...(11)

<400> 11

Xaa Cys Met Leu Gly Arg Val Tyr Arg Pro Cys

1

5

10

<210> 12

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1) ... (1)

<223> Xaa = D-glutamine

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 12

Xaa Cys Met Leu Gly Arg Val Tyr Arg Pro Cys

1

5

10

<210> 13

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1) ... (1)

<223> Xaa = D-lysine

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 13

Xaa Cys Met Leu Gly Arg Val Tyr Arg Pro Cys

1

5

10

<210> 14

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1) ... (1)

<223> Xaa = D-citrulline

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 14

Xaa Cys Met Leu Gly Arg Val Tyr Arg Pro Cys

1

5

10

<210> 15

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1) ... (1)

<223> Xaa = des-amino-cysteine

<220>

<221> AMIDATION

<222> (10) ... (10)

<400> 15

Xaa Met Leu Gly Arg Val Tyr Arg Pro Cys

1

5

10

<210> 16

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 16

Arg Cys Met Leu Ala Arg Val Tyr Arg Pro Cys

1

5

10

<210> 17

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 17

Arg Cys Met Leu Leu Arg Val Tyr Arg Pro Cys

1

5

10

<210> 18

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (5)...(5)

<223> Xaa = norleucine

<220>

<221> DISULFID

<222> (2)...(11)

<220>

<221> ACETYLTATION

<222> (1)...(1)

<220>

<221> AMIDATION

<222> (11)...(11)

<400> 18

Arg Cys Met Leu Xaa Arg Val Tyr Arg Pro Cys

1

5

10

<210> 19

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (5)...(5)

<223> Xaa = 2-cyclohexylalanine

<220>

<221> DISULFID

<222> (2)...(11)

<220>

<221> ACETYLATION

<222> (1)...(1)

<220>

<221> AMIDATION

<222> (11)...(11)

<400> 19

Arg Cys Met Leu Xaa Arg Val Tyr Arg Pro Cys

1

5

10

<210> 20

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 20

Arg Cys Met Leu Phe Arg Val Tyr Arg Pro Cys

1

5

10

<210> 21

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (5) ... (5)

<223> Xaa = 2'-naphthylalanine

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 21

Arg Cys Met Leu Xaa Arg Val Tyr Arg Pro Cys

1

5

10

<210> 22

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 22

Arg Cys Met Leu Pro Arg Val Tyr Arg Pro Cys

1

5

10

<210> 23

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 23

Arg Cys Met Leu Arg Arg Val Tyr Arg Pro Cys

1

5

10

<210> 24

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 24

Arg Cys Met Leu Lys Arg Val Tyr Arg Pro Cys

1

5

10

<210> 25

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 25

Arg Cys Met Leu Asn Arg Val Tyr Arg Pro Cys

1

5

10

<210> 26

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> DISULFID

<222> (2)...(11)

<220>

<221> ACETYLTATION

<222> (1)...(1)

<220>

<221> AMIDATION

<222> (11)...(11)

<400> 26

Arg Cys Met Leu Ser Arg Val Tyr Arg Pro Cys

1

5

10

<210> 27

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (5)...(5)

<223> Xaa = citrulline

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 27

Arg Cys Met Leu Xaa Arg Val Tyr Arg Pro Cys

,1 5 10

<210> 28

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 28

Arg Cys Met Leu Glu Arg Val Tyr Arg Pro Cys
1 5 10

<210> 29

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1)...(1)

<223> Xaa = D-arginine

<220>

<221> DISULFID

<222> (2)...(11)

<220>

<221> ACETYLTATION

<222> (1)...(1)

<220>

<221> AMIDATION

<222> (11)...(11)

<400> 29

Xaa Cys Met Leu Asn Arg Val Tyr Arg Pro Cys
1 5 10

<210> 30

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1)...(1)

<223> Xaa = D-arginine

<220>

<221> DISULFID

<222> (2)...(11)

<220>

<221> ACETYLTATION

<222> (1)...(1)

<220>

<221> AMIDATION

<222> (11)...(11)

<400> 30

Xaa Cys Met Leu Gln Arg Val Tyr Arg Pro Cys

1

5

10

<210> 31

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1)...(1)

<223> Xaa = D-arginine

<220>

<221> MOD_RES

<222> (3)...(3)

<223> Xaa = norleucine

<220>

<221> DISULFID

<222> (2)...(11)

<220>

<221> ACETYLTATION

<222> (1)...(1)

<220>

<221> AMIDATION

<222> (11)...(11)

<400> 31

Xaa Cys Xaa Leu Asn Arg Val Tyr Arg Pro Cys

1

5

10

<210> 32

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1)...(1)

<223> Xaa = D-arginine

<220>

<221> MOD_RES

<222> (3) ... (3)

<223> Xaa= norleucine

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 32

Xaa Cys Xaa Leu Asn Arg Val Tyr Ala Pro Cys

1 5 10

<210> 33

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1) ... (1)

<223> Xaa = D-arginine

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 33

Xaa Cys Met Leu Asn Arg Val Tyr Ala Pro Cys

1

5

10

<210> 34

<211> 11

<212> PRT

<213> VArtificial Sequence

<220>

<223> MCH Analog

<220>

<221> MOD_RES

<222> (1) ... (1)

<223> Xaa = D-citrulline

<220>

<221> DISULFID

<222> (2) ... (11)

<220>

<221> ACETYLATION

<222> (1) ... (1)

<220>

<221> AMIDATION

<222> (11) ... (11)

<400> 34

Xaa Cys Met Leu Asn Arg Val Thr Arg Pro Cys

1 5 10

<210> 35

<211> 353

<212> PRT

<213> Human

<400> 35

Met Asp Leu Glu Ala Ser Leu Leu Pro Thr Gly Pro Asn Ala Ser Asn

1 5 10 15

Thr Ser Asp Gly Pro Asp Asn Leu Thr Ser Ala Gly Ser Pro Pro Arg

20 25 30

Thr Gly Ser Ile Ser Tyr Ile Asn Ile Ile Met Pro Ser Val Phe Gly

35 40 45

Thr Ile Cys Leu Leu Gly Ile Ile Gly Asn Ser Thr Val Ile Phe Ala

50 55 60

Val Val Lys Lys Ser Lys Leu His Trp Cys Asn Asn Val Pro Asp Ile

65 70 75 80

Phe Ile Ile Asn Leu Ser Val Val Asp Leu Leu Phe Leu Leu Gly Met

85 90 95

Pro Phe Met Ile His Gln Leu Met Gly Asn Gly Val Trp His Phe Gly

100 105 110

Glu Thr Met Cys Thr Leu Ile Thr Ala Met Asp Ala Asn Ser Gln Phe

115 120 125

Thr Ser Thr Tyr Ile Leu Thr Ala Met Ala Ile Asp Arg Tyr Leu Ala

130 135 140

Thr Val His Pro Ile Ser Ser Thr Lys Phe Arg Lys Pro Ser Val Ala

145 150 155 160

Thr Leu Val Ile Cys Leu Leu Trp Ala Leu Ser Phe Ile Ser Ile Thr

165 170 175

Pro Val Trp Leu Tyr Ala Arg Leu Ile Pro Phe Pro Gly Gly Ala Val

180 185 190

Gly Cys Gly Ile Arg Leu Pro Asn Pro Asp Thr Asp Leu Tyr Trp Phe

| | | |
|-----------------------------------------------------------------|-----|-----|
| 195 | 200 | 205 |
| Thr Leu Tyr Gln Phe Phe Leu Ala Phe Ala Leu Pro Phe Val Val Ile | | |
| 210 | 215 | 220 |
| Thr Ala Ala Tyr Val Arg Ile Leu Gln Arg Met Thr Ser Ser Val Ala | | |
| 225 | 230 | 235 |
| Pro Ala Ser Gln Arg Ser Ile Arg Leu Arg Thr Lys Arg Val Thr Arg | | |
| 245 | 250 | 255 |
| Thr Ala Ile Ala Ile Cys Leu Val Phe Phe Val Cys Trp Ala Pro Tyr | | |
| 260 | 265 | 270 |
| Tyr Val Leu Gln Leu Thr Gln Leu Ser Ile Ser Arg Pro Thr Leu Thr | | |
| 275 | 280 | 285 |
| Phe Val Tyr Leu Tyr Asn Ala Ala Ile Ser Leu Gly Tyr Ala Asn Ser | | |
| 290 | 295 | 300 |
| Cys Leu Asn Pro Phe Val Tyr Ile Val Leu Cys Glu Thr Phe Arg Lys | | |
| 305 | 310 | 315 |
| Arg Leu Val Leu Ser Val Lys Pro Ala Ala Gln Gly Gln Leu Arg Ala | | |
| 325 | 330 | 335 |
| Val Ser Asn Ala Gln Thr Ala Asp Glu Glu Arg Thr Glu Ser Lys Gly | | |
| 340 | 345 | 350 |
| Thr | | |

<210> 36

<211> 1062

<212> DNA

<213> Human

<400> 36

```

atggacctgg aagcctcgct gctgcccact ggtcccaacg ccagcaacac ctctgatggc 60
cccgataacc tcacttcggc aggatcacct cctcgcacgg ggagcatctc ctacatcaac 120
atcatcatgc cttegggtgtt cggcaccatc tgcctcctgg gcatcatcgg gaactccacg 180
gtcatcttcg cggtcgtgaa gaagtccaag ctgcactggg gcaacaacgt ccccgacatc 240
ttcatcatca acctctcggt agtagatctc ctctttctcc tgggcatgcc ctcatgatc 300
caccagctca tgggcaatgg ggtgtggcac tttggggaga ccatgtgcac cctcatcacg 360
gccatggatg ccaatagtca gttcaccagc acctacatcc tgaccgcat ggccattgac 420
cgctacctgg ccactgtcca ccccatctct tccacgaagt tccggaagcc ctctgtggcc 480

```

```

accctgggtga tctgcctcct gtgggccctc tccttcatca gcatcacccc tgtgtgggtg 540
tatgccagac tcatccccctt cccaggaggt gcagtggggt gcggcatacg cctgcccac 600
ccagacactg acctctactg gttcacctg taccagtttt tcttggcctt tgcctgcct 660
tttgtgggtca tcacagccgc atacgtgagg atcctgcagc gcatgacgtc ctcagtggcc 720
cccgctccc agcgcagcat ccggctgcgg acaaagaggg tgaccgcac agccatcgcc 780
atctgtctgg tcttctttgt gtgctgggca ccctactatg tgctacagct gaccagttg 840
tccatcagcc gcccgacctt cacctttgtc tacttataca atgcggccat cagcttgggc 900
tatgccaaaca gctgcctcaa cccctttgtg tacatcgtgc tctgtgagac gttccgcaa 960
cgcttgggtcc tgtcggtgaa gcctgcagcc caggggcagc ttcgcgctgt cagcaacgt 1020
cagacggctg acgaggagag gacagaaagc aaaggcacct ga 1062

```

<210> 37

<211> 340

<212> PRT

<213> Human

<400> 37

```

Met Asn Pro Phe His Ala Ser Cys Trp Asn Thr Ser Ala Glu Leu Leu
 1             5             10             15
Asn Lys Ser Trp Asn Lys Glu Phe Ala Tyr Gln Thr Ala Ser Val Val
      20             25             30
Asp Thr Val Ile Leu Pro Ser Met Ile Gly Ile Ile Cys Ser Thr Gly
      35             40             45
Leu Val Gly Asn Ile Leu Ile Val Phe Thr Ile Ile Arg Ser Arg Lys
      50             55             60
Lys Thr Val Pro Asp Ile Tyr Ile Cys Asn Leu Ala Val Ala Asp Leu
      65             70             75             80
Val His Ile Val Gly Met Pro Phe Leu Ile His Gln Trp Ala Arg Gly
      85             90             95
Gly Glu Trp Val Phe Gly Gly Pro Leu Cys Thr Ile Ile Thr Ser Leu
      100            105            110
Asp Thr Cys Asn Gln Phe Ala Cys Ser Ala Ile Met Thr Val Met Ser
      115            120            125
Val Asp Arg Tyr Phe Ala Leu Val Gln Pro Phe Arg Leu Thr Arg Trp
      130            135            140
Arg Thr Arg Tyr Lys Thr Ile Arg Ile Asn Leu Gly Leu Trp Ala Ala
      145            150            155            160

```

Ser Phe Ile Leu Ala Leu Pro Val Trp Val Tyr Ser Lys Val Ile Lys
 165 170 175
 Phe Lys Asp Gly Val Glu Ser Cys Ala Phe Asp Leu Thr Ser Pro Asp
 180 185 190
 Asp Val Leu Trp Tyr Thr Leu Tyr Leu Thr Ile Thr Thr Phe Phe Phe
 195 200 205
 Pro Leu Pro Leu Ile Leu Val Cys Tyr Ile Leu Ile Leu Cys Tyr Thr
 210 215 220
 Trp Glu Met Tyr Gln Gln Asn Lys Asp Ala Arg Cys Cys Asn Pro Ser
 225 230 235 240
 Val Pro Lys Gln Arg Val Met Lys Leu Thr Lys Met Val Leu Val Leu
 245 250 255
 Val Val Val Phe Ile Leu Ser Ala Ala Pro Tyr His Val Ile Gln Leu
 260 265 270
 Val Asn Leu Gln Met Glu Gln Pro Thr Leu Ala Phe Tyr Val Gly Tyr
 275 280 285
 Tyr Leu Ser Ile Cys Leu Ser Tyr Ala Ser Ser Ser Ile Asn Pro Phe
 290 295 300
 Leu Tyr Ile Leu Leu Ser Gly Asn Phe Gln Lys Arg Leu Pro Gln Ile
 305 310 315 320
 Gln Arg Arg Ala Thr Glu Lys Glu Ile Asn Asn Met Gly Asn Thr Leu
 325 330 335
 Lys Ser His Phe
 340

<210> 38

<211> 1023

<212> DNA

<213> Human

<400> 38

atgaatccat ttcattgcac ttgttggaac acctctgccg aactttttaa caaatcctgg 60
 aataaagagt ttgcttatca aactgccagt gtggtagata cagtcaccc ccttccatg 120
 attgggatta tctgttcaac agggctgggt ggcaacatcc tcattgtatt cactataata 180
 agatccagga aaaaaacagt ccctgacatc tatatctgca acctggctgt ggctgatttg 240
 gtccacatag ttggaatgcc ttttcttatt caccaatggg cccgaggggg agagtgggtg 300

```
tttggggggc ctctctgcac catcatcaca tccctggata cttgtaacca atttgccctgt 360
agtgccatca tgactgtaat gagtgtggac aggtactttg ccctcgtcca accatttcga 420
ctgacacgtt ggagaacaag gtacaagacc atccggatca atttgggcct ttgggcagct 480
tcctttatcc tggcattgcc tgtctgggtc tactcgaagg tcatcaaatt taaagacggt 540
gttgagagtt gtgcttttga tttgacatcc cctgacgatg tactctggta tacactttat 600
ttgacgataa caactttttt tttccctcta cccttgattt tgggtgtgcta tattttaatt 660
ttatgctata cttgggagat gtatcaacag aataaggatg ccagatgctg caatcccagt 720
gtacccaaac agagagtgat gaagttagaca aagatgggtgc tgggtgctggt ggtagtcttt 780
atcctgagtg ctgcccccta tcatgtgata caactgggtga acttacagat ggaacagccc 840
acactggcct tctatgtggg ttattacctc tccatctgtc tcagctatgc cagcagcagc 900
attaaccctt ttctctacat cctgctgagt ggaaatttcc agaaacgtct gcctcaaata 960
caaagaagag cgactgagaa ggaaatcaac aatatgggaa acactctgaa atcacacttt 1020
tag 1023
```